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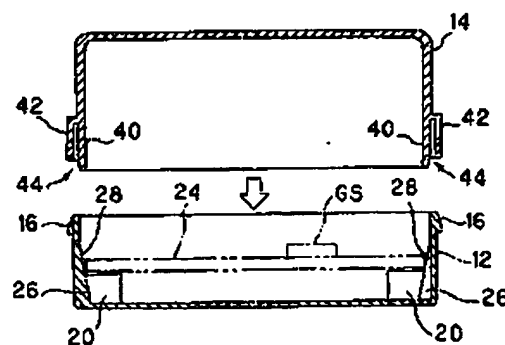
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(54) 【発明の名称】 電子部品収容ケース

(57) 【要約】

【課題】 カバー取着時のガタの発生を低減させつつ、高い防水性を備える電子部品収納ケースを提供する。

【解決手段】 非弾性材からなるケース本体12と、弾性素材からなるカバー14とからなり、電子部品を収納する電子部品収納ケース10の、前記カバーの開口端にフォーク部44を形成し、その外周側(外壁部42)に嵌合口46を形成し、前記ケース本体の開口端の外壁側から爪部16を突起させて前記嵌合口と係合可能に形成し、前記ケース本体の内壁側の少なくとも一部を突起させてガイドリブ26を形成すると共に、前記リブの高さを前記開口端に向けて減少させたテーパー部28を形成する。



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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the prefabricated frame structure of the electronic-parts hold case which consists of a case body and covering in more detail about an electronic-parts hold case.

[0002]

[Description of the Prior Art] The configuration of the electronic-parts hold case concerning the conventional technique is explained using drawing 14 from drawing 11. In addition, in the following explanation, the "upper part" and a "lower part" shall express the vertical direction over a vertical axis (gravity shaft).

[0003] Drawing 11 is a perspective view for explaining the configuration of the electronic-parts hold case 100 concerning the conventional technique. The electronic-parts hold case 100 concerning the conventional technique consists of coverings 104 which consist of elastic material, such as the case body 102 which consists of inelastic material, such as aluminum, and resin.

[0004] While an end is used as an opening edge and the case body 102 is a top-surface-view abbreviation rectangle-like, the projecting claw part 106 of each of that external wall surface is suitably formed in a location. While each claw part 106 is formed in the shape of a taper towards an opening edge, the side which counters an opening edge is formed so that it may become a field parallel to the base (reverse side of an opening edge) 108 of the case body 102. The substrate fixed part 110 for fixing a substrate is formed in each angle of the shape of an abbreviation rectangle of the case body 102, and a substrate (it illustrates in drawing 12 and drawing 1313) is fixed to it with a bolt or a screw (not shown [ both ]).

[0005] An end is used as an opening edge, and covering 104 is formed so that it may be a bottom face view abbreviation rectangle-like. Moreover, the opening edge of covering 104 is constituted from the shape of an opening edge and abbreviation isomorphism of the case body 102 by \*\* size. Furthermore, the sleeve 112 which followed the opening edge is formed in the perimeter of the case body 102.

[0006] When covering 104 is somewhat greatly and more specifically attached in the case body 102 so that it may be well shown in drawing 12 while being the shape of a configuration and isomorphism of an opening edge of covering 104, a sleeve 112 is constituted so that the opening edge of the case body 102 may be covered.

[0007] Said claw part 106 is inserted in the proper location of a sleeve 112, and two or more fitting openings 114 are drilled in the location which can be engaged. In addition, the connector hole 118 for arranging the connector (not shown) for making electric connection of the interior of a case and the exterior is formed in the electronic-parts hold case 100.

[0008] Subsequently, the structure after the assembly of the electronic-parts hold case applied to the conventional technique using drawing 14 from drawing 12 and assembly is explained.

[0009] Drawing 12 is the XII-XII line sectional view explaining the condition before and behind the assembly of the electronic-parts hold case 100 concerning the conventional technique of drawing 11. The substrate (a fictitious outline shows) 116 which carried first electronic parts, such as the G sensor

GS which outputs the signal according to acceleration, in the substrate fixed part 110 of the case body 102 is fixed with a bolt or a screw so that it may be well shown in this drawing.

[0010] The electronic-parts hold case 100 concerning the conventional technique makes the opening edge of the case body 102 and covering 104 counter drawing 12 , as an arrow head shows, and it is attached and it is assembled so that a claw part 106 may engage with the fitting opening 114 of a sleeve 112.

[0011] While the condition of having attached covering 104 is shown in the case body 102 at drawing 13 , the part A with which a claw part 106 and the fitting opening 114 engaged is expanded, and it is shown in drawing 14 . Since the opening edge [ of a claw part 106 ] and reverse side is formed so that it may become the base 108 of the case body 102, and an parallel field so that it may be well shown in drawing 14 , the once attached covering 104 cannot be demounted easily.

[0012]

[Problem(s) to be Solved by the Invention] If it was in the electronic-parts hold case 100 concerning the conventional technique, the dimension a of drawing 14 , i.e., the overall length of the vertical direction of a claw part 106 and the vertical lay length of the fitting opening 114, needed to be strictly made the same. When the overall length of the vertical direction of a claw part 106 is short as compared with the vertical lay length of the fitting opening 114, and a clearance is generated, a possibility that a backlash may occur is in the covering 104 after attachment.

[0013] When a backlash occurs to the covering 104 after attachment, there is a possibility that covering 104 may separate from the force of longitudinal directions, such as distortion, in the carrier beam case. Moreover, as compared with the vertical lay length of the fitting opening 114, when long, attachment of covering 104 of the overall length of the vertical direction of a claw part 106 becomes impossible.

[0014] In order to cancel this inconvenience, the technique of preparing the step of the shape of a pawl and a taper in the fitting section of covering of a case body, and preventing generating of a backlash is proposed so that it may be indicated by JP,9-46065,A.

[0015] Furthermore, if it is in this kind of electronic-parts hold case, when it takes into consideration that it is the case where the substrate carrying electronic parts is held, it is desirable to have high waterproofness.

[0016] In order to raise the waterproofness of a case, the technique which made the multiple wall the periphery section a case body and near the engagement section of covering is proposed so that it may be indicated by JP,5-62125,U.

[0017] however, the technique had not been what can give high waterproofness simultaneously to an electronic-parts hold case since each above-mentioned \*\*, without a backlash generating an electronic-parts hold case on the \*\*\*\*\* occasion.

[0018] Therefore, this invention aims at offering the electronic-parts hold case which can be equipped with high waterproofness in the electronic-parts hold case which consists of a case body and covering, without a backlash occurring, in case covering is attached.

[0019]

[Means for Solving the Problem] In order to solve the above-mentioned technical problem, it sets to invention given in claim 1 term. While opening is carried out to the case body which consists of inelastic material while opening is carried out by the end by the end In the electronic-parts hold case where consist of covering which consists of elastic material, and electronic parts are held in the interior Form the fork section in the opening edge of said covering, and fitting opening is formed in the periphery side of said fork section. While a claw part is projected from the outer wall side of the opening edge of said case body, and forming possible [ said fitting opening and engagement ], and projecting at least the part by the side of the wall of said case body and forming a guide rib It constituted so that the taper section which the height of said guide rib was turned [ section ] to said opening edge, and decreased it might be formed.

[0020] The electronic-parts hold case which can be equipped with high waterproofness can be offered without a backlash occurring in the electronic-parts hold case which consists of a case body and covering, in case covering is attached since the guide rib which is from the taper section on the wall side

of a case body was formed while forming the fork section in the opening edge of covering, namely, making the periphery section of an opening edge into the multiplet structure.

[0021] Moreover, in claim 2 term, it constituted so that the substrate carrying said electronic parts might be held in contact with the taper section of said guide rib.

[0022] When a substrate contacts the taper section of a guide rib, positioning between a substrate and a substrate fixed part becomes easy. Moreover, since a substrate is held showing around at the taper section, it becomes easy to hold it the substrate to a case body.

[0023]

[Embodiment of the Invention] Hereafter, the electronic-parts hold case applied to the gestalt of one implementation of this invention with reference to an accompanying drawing is explained.

[0024] Drawing 1 is a perspective view for explaining the configuration of the electronic-parts hold case 10 concerning the gestalt of one implementation of this invention. The electronic-parts hold case 10 concerning this invention consists of coverings 14 which consist of elastic material, such as the case body 12 which consists of inelastic material, such as aluminum, and resin, like the electronic-parts hold case concerning the conventional technique. In addition, the electronic-parts hold case 10 shown in drawing 1 R> 1 carries electronic parts, such as G sensor which outputs the signal according to acceleration, and is used for actuation of an air bag etc. so that it may mention later, but since those actuation is not related to the summary of this invention, it omits explanation.

[0025] The configuration of the case body 12 is explained with reference to drawing 4 R> 4 from drawing 2. The explanation side elevation and drawing 4 as which drawing 2 looked at the explanation plan of the case body 12, and drawing 3 looked at the case body 12 from [ of drawing 2 ] arrow-head alpha are drawing 2. It is an IV-IV line sectional view. <BR> [0026] An end is used as an abbreviation rectangle-like opening edge, and, as for the case body 12, the projecting claw part 16 of the external wall surface of the shape of the rectangle is suitably formed in a location so that it may be well shown in drawing 2. While each claw part 16 is formed in the shape of a taper towards an opening edge, the side which counters the opening edge of a claw part 16 is formed so that it may become a field parallel to the base (reverse side of an opening edge) 18 of the case body 12, so that it may be well shown in drawing 3 R> 3 and drawing 4.

[0027] The substrate fixed part 20 for fixing a substrate is formed in each angle inside the shape of an abbreviation rectangle of the case body 12, and the substrate 24 (a fictitious outline shows) in which electronic parts, such as the G sensor GS, were carried with the bolt (or screw) 22 is fixed to it. Moreover, two or more guide ribs 26 by the side of the internal surface of the case body 12 which projected in the part are formed suitably.

[0028] Moreover, the taper section 28 which the height was turned [ section ] to said opening edge, and decreased it is formed in said guide rib 26. Here, when a substrate 24 is fixed to the substrate fixed part 20, the height of the taper section 28 is formed so that it may hold in contact with all the taper sections 28.

[0029] Subsequently, the configuration of covering 14 is explained with reference to drawing 7 from drawing 5. Drawing 5 is the explanation bottom view (what was illustrated from opening one end of drawing 1) of covering 14, and drawing 6 is VI-VI of drawing 5. A line sectional view and drawing 7 are the explanation side elevations which looked at covering 14 from [ of drawing 5 ] arrow-head beta.

[0030] An end is used as an abbreviation rectangle-like opening edge, and let the opening edge be \*\*\*\* size for covering 14 by the shape of an opening edge and abbreviation isomorphism of the case body 12 so that it may be well shown in drawing 5.

[0031] The fork section 44 which consists of the wall section 40 and the outer wall section 42 is formed on the outskirts of an opening edge of covering 14 so that it may be well shown in drawing 6. It considers as the shape of a configuration and isomorphism of an opening edge (and opening edge of the case body 12) of covering 14, the configuration (bottom face view) of the wall section 40 is somewhat smaller than the opening edge of the case body 12, namely, when covering 14 is attached in the case body 12, it is constituted so that it may be located inside the opening edge of the case body 12.

[0032] Moreover, it considers as the shape of a configuration and isomorphism of an opening edge (and

opening edge of the case body 12) of covering 14, the configuration (bottom face view) of the outer wall section 42 is somewhat larger than the opening edge of the case body 12, namely, when covering 14 is attached in the case body 12, it is constituted so that it may be located in the outside of the opening edge of the case body 12.

[0033] Moreover, in the part into which the opening edge of the case body 12 is introduced, in the circumference of a soffit of the wall section 40 and the outer wall section 42, it is formed in the shape of a taper so that the installation may become easy, so that it may be well shown in drawing 6.

Furthermore, a claw part 16 is inserted in the proper location of the outer wall section 42, and two or more fitting openings 46 which can be engaged are drilled in it.

[0034] In addition, compared with the electronic-parts hold case concerning the conventional technique, the overall length of the vertical direction of a claw part 16 explains to an example the case where only a minute amount is short formed to the overall length of the vertical direction of the fitting opening 46.

Furthermore, the connector hole 48 (shown in drawing 1 and drawing 5) for arranging the connector (not shown) for making electric connection between the interior of a case and the exterior is formed in the electronic-parts hold case 10.

[0035] Subsequently, the assembly and the configuration of the electronic-parts hold case 10 which are shown in drawing 1 using drawing 10 from drawing 8 are explained.

[0036] Drawing 8 is VIII-VIII explaining the condition before attaching covering 14 in the case body 12 shown in drawing 1 of drawing 1. It is a line sectional view. A substrate (a fictitious outline shows) 24 is first fixed to the substrate fixed part 20 of the KESU body 12 with a bolt (or screw) 22 so that it may be well shown in this drawing.

[0037] As described above, the height of the taper section 28 is constituted so that all the taper sections 28 may be contacted, when a substrate 24 is fixed to the substrate fixed part 20. That is, in case it is fixed to the case body 12, a substrate 24 is held, showing around at the taper section 28, after being inserted in opening of the case body 12 so that it may be contacted by the proper location of the substrate fixed part 20.

[0038] Next, the opening edge of the case body 12 and covering 14 is made to counter drawing 8, as an arrow head shows, and it is attached so that a claw part 16 may engage with the fitting opening 46 of the outer wall section 42. While the condition that covering 14 was attached in the case body 12 is shown in drawing 9, the part B with which a claw part 16 and the fitting opening 46 engaged is expanded, and it is shown in drawing 10.

[0039] Since the reverse side over the opening edge of a claw part 16 is formed so that it may become the base 18 of the case body 12, and an parallel field so that it may be well shown in drawing 10 from drawing 8, the once attached covering 14 cannot be demounted easily. Moreover, since it considered as structure equipped with the fork section 44 which consists of the wall section 40 and the outer wall section 42, high waterproofness can be maintained.

[0040] Subsequently, an operation of the force in the partial circumference in which a claw part 16 and the fitting opening 46 were engaged is explained using drawing 10.

[0041] Since covering 14 consists of elastic material as above-mentioned, as it is shown in drawing 9, when it is attached, so that the wall section 40 may be good for drawing 10 and it may be shown, in response to the fact that the force of vertical to the taper section 28 from the taper section 28 of guide rib 26 vector:F, only an amount curves suitably towards the direction of the interior of a case body.

[0042] It is here and vector:F is decomposed into vector:f2 of the vector:f1 and the direction of a vertical (upper and lower sides) of the horizontal direction at the time of covering 14 attachment (the direction of a field parallel to the base of a case body). That is, covering 14 always (the case attachment direction and hard flow) receives vector:f2 of pantograph adherence pressure, after being attached in the case body 12.

[0043] The vector described above in the soffit of the fitting opening 46 so that it might illustrate since the reverse side over the opening edge of a claw part 16 was formed so that it might become the base 18 of the case body 12, and an parallel field as described above: The reaction force of vector:f2r of hard flow arises in the same magnitude as f2.

[0044] Thus, covering 14 is always depressed from the part formed in parallel of a claw part 16, and matches in response to vector:f2r of the force while it always receives vector:f2 of pantograph adherence pressure with the guide rib 26. That is, even when the overall length of the vertical direction of a claw part 16 is small formed only for a minute amount to the overall length b of the vertical direction of the fitting opening 46, covering 14 does not separate and the backlash of covering 14 does not arise, as described above.

[0045] Moreover, a horizontal (the direction of a field parallel to the base of a case body) vector: By f1, in order that the wall section 40, the outer wall section 42, and the fork section 44 may receive the force to the hold direction of a case 10, between the peripheral face of the case body 12 and the outer wall sections 42 sticks, and waterproofness increases further.

[0046] An electronic-parts hold case equipped with advanced waterproofness can be offered reducing generating of the backlash at the time of covering attachment, since it constituted as mentioned above if it was in the gestalt of implementation of this invention. Moreover, hold of the substrate to a case body becomes easy with the guide rib 26 which has the taper section 28.

[0047] As described above, it sets in the gestalt of implementation of this invention. While opening is carried out to the case body 12 which consists of inelastic material while opening is carried out by the end by the end In the electronic-parts hold case 10 where consist of covering 14 which consists of elastic material, and electronic parts are held in the interior Form the fork section 44 in the opening edge of said covering, and the fitting opening 46 is formed in the periphery side (outer wall section 42) of said fork section. While a claw part 16 is projected from the outer wall side of the opening edge of said case body, and forming possible [ said fitting opening and engagement ], and projecting at least the part by the side of the wall of said case body and forming the guide rib 26 It constituted so that the taper section 28 which the height of said guide rib was turned [ section ] to said opening edge, and decreased it might be formed.

[0048] Moreover, it constituted so that the substrate 24 carrying said electronic parts might be held in contact with the taper section of said guide rib.

[0049] In the gestalt of above-mentioned operation, although the configuration of the case body 12 and the opening edge of covering 14 was made into the abbreviation rectangle, it is not restricted to it but various modes, such as the shape of a polygon, can be taken.

[0050]

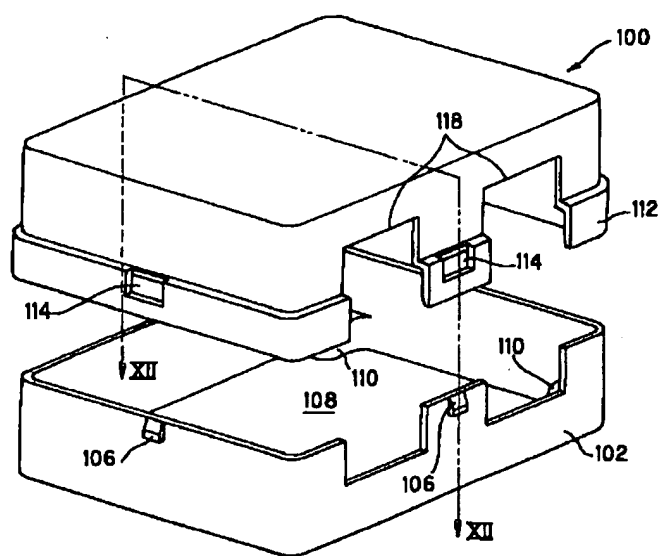
[Effect of the Invention] The electronic-parts hold case which can be equipped with high waterproofness can offer without a backlash occurring in the electronic-parts hold case which consists of a case body and covering, in case covering is attached since the guide rib which is from the-taper section on the wall side of a case body was formed while the fork section was formed in the opening edge of covering, namely, the periphery section of an opening edge considered as the multiplet structure in invention given in claim 1 term.

[0051] Moreover, when a substrate contacts claim 2 term in invention of a publication at the taper section of a guide rib, positioning between a substrate and a substrate fixed part becomes easy.

Moreover, since a substrate is held showing around at the taper section, it becomes easy to hold it the substrate to a case body.

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Drawing selection  ☒

[Translation done.]

# PATENT ABSTRACTS OF JAPAN

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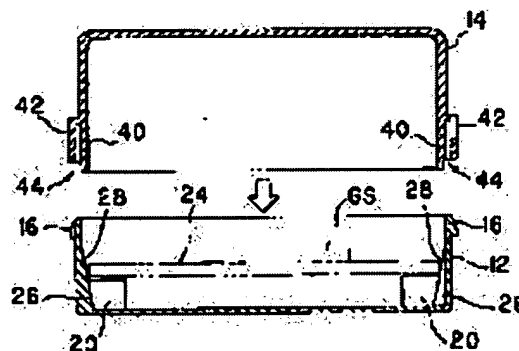
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## (54) ELECTRONIC COMPONENT CONTAINING CASE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide an electronic component containing case having high waterproofness while reducing occurrence of looseness at a cover attaching time.

**SOLUTION:** The electronic component containing case comprises a case body 12 made of an inelastic material, and a cover 14 made of an elastic stock. Fork parts 44 are formed at opening ends of the cover of the containing case 10 for containing an electronic component, an engaging port 46 is formed at its outer peripheral side (outer wall 42), a claw 16 is projected from an outer wall side of the opening end of the case body and formed connectibly to the engaging port, at least one parts of an inner wall side of the case body are projected to form guide ribs 26, and tapered part 28 for lowering heights of the ribs toward the opening ends are formed.



## LEGAL STATUS

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